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Jacob Cigna

FROM:

David A. Guerra

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APPLICANT:

Robert Burgler

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ARRANGEMENT AND METHOD FOR
PRODUCING A CAMSHAFT

FILING DATE:

07/06/2006

RE:

Claim Amendments Per Telephone
Interview

ATTORNEY DOCKET NUMBER:

AP103-06



URGENT



FOR REVIEW



PLEASE COMMENT



PLEASE REPLY

Jacob Cigna:

In response to our telephone interview on September 30, 2009, the following amendments, remarks, and replacement drawing sheet are respectfully submitted in connection with the above identified application.

Sincerely,

David Guerra

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Application No.: 10/597,013

Docket No.: AP103-06

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

(1) Please amend claims 19, second instance of 21, and 22-38.

LISTING OF CLAIMS:

Claims 1-18 (Canceled).

Claim 19 (Currently amended): A camshaft producing system for manufacturing a camshaft from a shaft and at least one cam, said camshaft producing system comprising:

a positioning element removably affixed to said shaft;

a manipulating device for transporting said shaft, said manipulating device

adapted to be attachable to said positioning element; and

at least two machining stations comprising:

at least one knurling station having a corresponding first workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, said knurling station being adapted to rotate said shaft; and

at least one press-on station having a corresponding second workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, said press-on station being adapted to press said cam on to said shaft; ~~and~~

~~a manipulating device for transporting said shaft, said manipulating device~~

~~adapted to be attachable to said positioning element.~~

Claim 20 (Previously presented): The camshaft producing system as set forth in claim 19, wherein said knurling station further comprising a motor for rotating said shaft.

Claim 21 (Previously presented): The camshaft producing system as set forth in claim 20, wherein said positioning element further comprising a conical guide-in area adapted to tightly fit into said corresponding workpiece-receiving socket of said knurling and press-on stations.

Application No.: 10/597,013

Docket No.: AP103-06

Claim ~~[[21]]~~22 (Currently amended): The camshaft producing system as set forth in claim 20 further comprising a taper key insertable into a groove defined in said positioning element and a groove defined in said workpiece-receiving socket, wherein said taper key is used in said knurling station to transmit the rotary movement from said motor via said workpiece-receiving socket to said shaft and for specifying the angular position of said respective cam in relation to said press-on station.

Claim ~~[[22]]~~23 (Currently amended): The camshaft producing system as set forth in claim 21, wherein said positioning element further comprising a jaw-shaft expansion and a taper key~~-29~~, wherein said taper key is insertable into said jaw-shaft expansion and said positioning element.

Claim ~~[[23]]~~24 (Currently amended): The camshaft producing system as set forth in claim 21, wherein said positioning element is selected from the group consisting of a mandrel, and a chuck.

Claim ~~[[24]]~~25 (Currently amended): The camshaft producing system as set forth in claim 21, wherein said knurling station further comprising rollers which can be displaced in the x-direction and in the z-direction, said rollers being adapted to be moved by means of a guide into the correct height position for knurling.

Claim ~~[[25]]~~26 (Currently amended): The camshaft producing system as set forth in claim ~~[[24]]~~25, wherein said rollers having a plurality of adjacent grooves adapted to form, over the circumference of said shaft, indentations and material accumulations on said shaft when said rollers are pressed in towards said shaft.

Claim ~~[[26]]~~27 (Currently amended): The camshaft producing system as set forth in claim ~~[[25]]~~26, wherein said press-on station further comprising a guide and an adjustable stop, wherein said guide having a seat adapted to hold said cam while retaining its angular position during the pressing-on process in the Z direction, wherein said adjustable stop being adapted to define the height up to which said cam is to be pressed on to said shaft.

Claim ~~[[27]]~~28 (Currently amended): A camshaft producing system comprising:
 a shaft having a base body, a groove in the area of the shaft end which serves as
 a position reference;
 at least one camshaft having a centrally defined opening;

Application No.: 10/597,013

Docket No.: AP103-06

a positioning element removably affixed to said shaft;
a manipulating device for transporting said shaft, said manipulating device
adapted to be attachable to said positioning element; and
at least two machining stations comprising:

at least one knurling station having a corresponding first workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, a motor adapted to rotate said shaft, and at least one roller, said rollers being displaceable in the x-direction and in the z-direction by means of a guide;

at least one press-on station having a corresponding second workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, said press-on station being adapted to press said cam on to said shaft; ~~and~~

~~a manipulating device for transporting said shaft, said manipulating device~~
~~adapted to be attachable to said positioning element;~~

wherein said roller having a plurality of adjacent grooves adapted to form, over the circumference of said shaft, indentations and material accumulations on said shaft when said roller is pressed in towards said shaft;

wherein said positioning element having a conical guide-in area adapted to tightly fit into said corresponding workpiece-receiving socket of said knurling and press-on stations.

Claim ~~[[28]]~~29 (Currently amended): The camshaft producing system as set forth in claim ~~[[27]]~~28 further comprising a taper key insertable into a groove defined in said positioning element and a groove defined in said workpiece-receiving socket, wherein said taper key is used in said knurling station to transmit the rotary movement from said motor via said workpiece-receiving socket to said shaft and for specifying the angular position of said respective cam in relation to said press-on station.

Claim ~~[[29]]~~30 (Currently amended): The camshaft producing system as set forth in claim ~~[[28]]~~29, wherein said press-on station further comprising a guide and an adjustable stop, wherein said guide having a seat adapted to hold said cam while retaining its angular position during the pressing-on process in the Z direction, wherein

Application No.: 10/597,013

Docket No.: AP103-06

said adjustable stop being adapted to define the height up to which said cam is to be pressed on to said shaft.

Claim ~~[[30]]~~31 (Currently amended): A method of producing a camshaft from a shaft and at least one camshaft, said method comprising the steps of:

providing a camshaft producing system comprising: a positioning element removably affixed to a shaft; a manipulating device for transporting said shaft, said manipulating device adapted to be attachable to said positioning element; and at least two machining stations comprising: at least one knurling station having a corresponding first workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, said knurling station being adapted to rotate said shaft; and at least one press-on station having a corresponding second workpiece-receiving socket for receiving said shaft using said positioning element affixed thereon, said press-on station being adapted to press said cam on to said shaft; ~~and a manipulating device for transporting said shaft, said manipulating device adapted to be attachable to said positioning element;~~ affixing said positioning element to the end of said shaft; transporting said positioning element and shaft to said knurling station via said manipulating device; affixing said positioning element and shaft to said knurling station for the duration of a first machining step; transporting said positioning element and shaft from said knurling station to said press-on station via said manipulating device after said first machining step is complete; and affixing said positioning element and shaft to said press-on station for the duration of second machining step.

Claim ~~[[31]]~~32 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[30]]~~31, wherein said shaft is knurled in said first machining step.

Claim ~~[[32]]~~33 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[31]]~~32, wherein a cam is pressed onto said shaft in said second machining step.

Application No.: 10/597,013

Docket No.: AP103-06

Claim ~~[[33]]~~34 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[32]]~~33, wherein said shaft is knurled on said knurling station in the area of the position provided for said cam, then in a second step said cam is pressed on said press-on station in said provided position and said two steps are then repeated for further cams.

Claim ~~[[34]]~~35 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[33]]~~34 further comprising the step of removing said positioning element from said shaft after the last pressing-on of said cam in said press-on station.

Claim ~~[[35]]~~36 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[34]]~~35, wherein multiple knurling steps are carried out in respectively the same knurling station, and multiple pressing steps are carried out in respectively the same press-on station.

Claim ~~[[36]]~~37 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[34]]~~35, wherein multiple knurling steps are carried out in a plurality of respectively the same knurling station, and multiple pressing steps are carried out in a plurality of respectively the same press-on station.

Claim ~~[[37]]~~38 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[34]]~~35, wherein said shaft is fixed using said positioning element first in said workpiece-receiving sockets of said knurling and press-on stations.

Claim ~~[[38]]~~39 (Currently amended): The method of producing a camshaft as set forth in claim ~~[[34]]~~35, wherein in the defined position for fixing said shaft onto said press-on station using said positioning element pre-defines the angular position for pressing-on said cam.

Application No.: 10/597,013

Docket No.: AP103-06

REMARKS

The Applicant appreciates the courteous and complete examination of the application by the Examiner. In view of the foregoing amendments and the following remarks, a reconsideration of the instant application is respectfully requested.

In order to expedite the prosecution of this application and per the telephone interview with the Examiner on September 30, 2009, claims 19, second instance of 21, and 22-38 have been amended. Claims 19-39 are now in this application.

Regarding the Drawings

The Examiner objected to the drawings because the drawings reference an element 19, which is not supported or described in the disclosure.

The Applicant submits replacement drawing sheet 3 containing Figures 3a and 3b which are in compliance with 37 CFR 1.84(p)(5). Figure 3b includes label 19, which clearly is pointing to the "material accumulations 18", as illustrated in the previous figures. Element label 19 was incorrectly entered into Figure 3b without any deceptive intent. Figure 3b has been amended to change label "19" to "18", thereby overcoming the Examiner's objection. The replacement drawing sheet is a formal drawing correcting all informalities indicated by the Examiner.

Regarding the Claims

The Examiner stated during the telephone interview on September 30, 2009, that amending independent claims 19, 27 and 30 to further describe the workpiece-receiving sockets as first and second sockets, and to further describe the knurling and press-on stations as separate stations, could put the claims in condition for allowance.

In response to the Examiner's suggestions, claims 19, 27 and 30 have been amended to further describe the workpiece-receiving sockets as separate first and second sockets, and to include the phrase "at least two machining stations comprising:" which further describes the stations as two separate stations that make up the machining stations, as suggested by the Examiner.

Application No.: 10/597,013

Docket No.: AP103-06

The Examiner objected to claim 21 for having a duplicate claim 21 reference number. The second instance of claim 21 has been amended so as to be renumbered as claim 22. All subsequent claims have been amended and renumbered so as to be in sequential order from the first instance of claim 21.

The Examiner objected to original claim 38 (now claim 39) for missing the term "cam" after the last word "said" in the claims.

In response to the Examiner's objection, original claim 38 (now claim 39) has been amended to include the term "cam" after the last term "said" in the claim.

Conclusion

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Applicant has endeavored to address all of the Examiner's concerns as expressed in the Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above-remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the clarity of the claims to particularly and distinctly point out the invention to those of skill in the art. Finally, Applicant submits that the claim limitations above represent only illustrative distinctions.

Application No.: 10/597,013

Docket No.: AP103-06

Hence, there may be other patentable features that distinguish the claimed invention from the prior art.

With the above amendments being fully responsive to all outstanding rejections and formal requirements, it is respectfully submitted that the claims are now in condition for allowance, and a notice to that effect is earnestly solicited. Should the Examiner feel that there are further issues which might be resolved by means of telephone interview, the Examiner is cordially invited to telephone the undersigned at (403) 444-5695, or email at davidguerra@internationalpatentgroup.com

No additional fee is due.

Respectfully Submitted,

/David A. Guerra/

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO, electronically submitted using EFS-Web, or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

On (Date) 09/30/2009 by David A. Guerra /David A. Guerra/